RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/759,731A

Source: 1,FWO

Date Processed by STIC: 12/22/04

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RAW SEQUENCE LISTING   DATE: 12/22/2004
PATENT APPLICATION: US/10/759,731A   TIME: 12:12:46

          Input Set : A:\Sequence Listing.txt
          Output Set: N:\CRF4\12222004\J759731A.raw

 3 <110> APPLICANT: Bond, Christoper J.
 5 <120> TITLE OF INVENTION: SYNTHETIC ANTIBODY PHAGE LIBRARIES
 7 <130> FILE REFERENCE: 11669.136USU1
 9 <140> CURRENT APPLICATION NUMBER: 10/759,731A
10 <141> CURRENT FILING DATE: 2004-01-16
12 <150> PRIOR APPLICATION NUMBER: US 60/441,059
13 <151> PRIOR FILING DATE: 2003-01-16
15 <150> PRIOR APPLICATION NUMBER: US 60/488,610
16 <151> PRIOR FILING DATE: 2003-07-18
18 <150> PRIOR APPLICATION NUMBER: US 60/510,314
19 <151> PRIOR FILING DATE: 2003-10-08
21 <160> NUMBER OF SEQ ID NOS: 194
23 <170> SOFTWARE: PatentIn version 3.3
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 109
27 <212> TYPE: PRT
28 <213> ORGANISM: Artificial Sequence
30 <220> FEATURE:
31 <223> OTHER INFORMATION: 4D5 light chain variable domain
33 <400> SEQUENCE: 1
35 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
36 1   5   10   15
39 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Val Asn Thr Ala
40   20   25   30
43 Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
44   35   40   45
47 Tyr Ser Ala Ser Phe Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
48   50   55   60
51 Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
52 65   70   75   80
55 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro
56   85   90   95
59 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr
60   100   105
63 <210> SEQ ID NO: 2
64 <211> LENGTH: 120
65 <212> TYPE: PRT
66 <213> ORGANISM: Artificial Sequence
68 <220> FEATURE:
69 <223> OTHER INFORMATION: 4D5 heavy chain variable domain
71 <400> SEQUENCE: 2
73 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
74 1   5   10   15

```
 77 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
 78         20                  25                  30
 81 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 82         35                  40                  45
 85 Ala Arg Ile Tyr Pro Thr Asn Gly Tyr Thr Arg Tyr Ala Asp Ser Val
 86     50                  55                  60
 89 Lys Gly Arg Phe Thr Ile Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr
 90 65                  70                  75                  80
 93 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 94             85                  90                  95
 97 Ser Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Val Trp Gly Gln
 98         100                 105                 110
101 Gly Thr Leu Val Thr Val Ser Ser
102         115             120
105 <210> SEQ ID NO: 3
106 <211> LENGTH: 35
107 <212> TYPE: PRT
108 <213> ORGANISM: Artificial Sequence
110 <220> FEATURE:
111 <223> OTHER INFORMATION: GNC4 leucine zipper
113 <400> SEQUENCE: 3
115 Gly Arg Met Lys Gln Leu Glu Asp Lys Val Glu Glu Leu Leu Ser Lys
116 1           5                   10                  15
119 Asn Tyr His Leu Glu Asn Glu Val Ala Arg Leu Lys Lys Leu Val Gly
120             20                  25                  30
123 Glu Arg Gly
124         35
127 <210> SEQ ID NO: 4
128 <211> LENGTH: 5
129 <212> TYPE: PRT
130 <213> ORGANISM: Artificial Sequence
132 <220> FEATURE:
133 <223> OTHER INFORMATION: C-terminal of CDRH3 of 4D5
135 <400> SEQUENCE: 4
137 Tyr Ala Met Asp Tyr
138 1               5
141 <210> SEQ ID NO: 5
142 <211> LENGTH: 7
143 <212> TYPE: PRT
144 <213> ORGANISM: Artificial Sequence
146 <220> FEATURE:
147 <223> OTHER INFORMATION: heavy chain CDR3
149 <400> SEQUENCE: 5
151 Ser Arg Asn Ala Trp Ala Phe
152 1               5
155 <210> SEQ ID NO: 6
156 <211> LENGTH: 11
157 <212> TYPE: PRT
158 <213> ORGANISM: Artificial Sequence
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160 <220> FEATURE:
161 <223> OTHER INFORMATION: heavy chain CDR3
163 <400> SEQUENCE: 6
165 Ser Arg Asn Leu Ser Glu Asn Ser Tyr Ala Met
166 1               5                   10
169 <210> SEQ ID NO: 7
170 <211> LENGTH: 11
171 <212> TYPE: PRT
172 <213> ORGANISM: Artificial Sequence
174 <220> FEATURE:
175 <223> OTHER INFORMATION: heavy chain CDR3
177 <400> SEQUENCE: 7
179 Ser Arg Ala Gly Trp Ala Gly Trp Tyr Ala Met
180 1               5                   10
183 <210> SEQ ID NO: 8
184 <211> LENGTH: 11
185 <212> TYPE: PRT
186 <213> ORGANISM: Artificial Sequence
188 <220> FEATURE:
189 <223> OTHER INFORMATION: heavy chain CDR3
191 <400> SEQUENCE: 8
193 Ser Arg Ala Ala Lys Ala Gly Trp Tyr Ala Met
194 1               5                   10
197 <210> SEQ ID NO: 9
198 <211> LENGTH: 12
199 <212> TYPE: PRT
200 <213> ORGANISM: Artificial Sequence
202 <220> FEATURE:
203 <223> OTHER INFORMATION: heavy chain CDR3
205 <400> SEQUENCE: 9
207 Ser Arg Ser Asp Gly Arg Asp Ser Ala Tyr Ala Met
208 1               5                   10
211 <210> SEQ ID NO: 10
212 <211> LENGTH: 13
213 <212> TYPE: PRT
214 <213> ORGANISM: Artificial Sequence
216 <220> FEATURE:
217 <223> OTHER INFORMATION: F63
220 <220> FEATURE:
221 <221> NAME/KEY: MISC_FEATURE
222 <222> LOCATION: (3)..(9)
223 <223> OTHER INFORMATION: Xaa is either A, C, D, E, G, K, N, R, S, T, Y, or W
225 <400> SEQUENCE: 10
W--> 227 Ser Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ala Met Asp Tyr
228 1               5                   10
231 <210> SEQ ID NO: 11
232 <211> LENGTH: 14
233 <212> TYPE: PRT
234 <213> ORGANISM: Artificial Sequence
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236 <220> FEATURE:
237 <223> OTHER INFORMATION: F65
240 <220> FEATURE:
241 <221> NAME/KEY: MISC_FEATURE
242 <222> LOCATION: (3)..(8)
243 <223> OTHER INFORMATION: Xaa is A, C, D, E, G, K, N, R, S, T, Y, or W
245 <220> FEATURE:
246 <221> NAME/KEY: MISC_FEATURE
247 <222> LOCATION: (9)..(9)
248 <223> OTHER INFORMATION: Xaa is any naturally occurring amino acid
250 <400> SEQUENCE: 11
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W--> `252 Ser Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Ala Met Asp Tyr`

```
253 1               5                   10
256 <210> SEQ ID NO: 12
257 <211> LENGTH: 13
258 <212> TYPE: PRT
259 <213> ORGANISM: Artificial Sequence
261 <220> FEATURE:
262 <223> OTHER INFORMATION: F64
265 <220> FEATURE:
266 <221> NAME/KEY: MISC_FEATURE
267 <222> LOCATION: (3)..(7)
268 <223> OTHER INFORMATION: Xaa is A, C, D, E, G, K, N, R, S, T, Y, or W
270 <220> FEATURE:
271 <221> NAME/KEY: MISC_FEATURE
272 <222> LOCATION: (8)..(8)
273 <223> OTHER INFORMATION: Xaa is any naturally occurring amino acid
275 <400> SEQUENCE: 12
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W--> `277 Ser Arg Xaa Xaa Xaa Xaa Xaa Xaa Tyr Ala Met Asp Tyr`

```
278 1               5                   10
281 <210> SEQ ID NO: 13
282 <211> LENGTH: 13
283 <212> TYPE: PRT
284 <213> ORGANISM: Artificial Sequence
286 <220> FEATURE:
287 <223> OTHER INFORMATION: F66
290 <220> FEATURE:
291 <221> NAME/KEY: MISC_FEATURE
292 <222> LOCATION: (3)..(8)
293 <223> OTHER INFORMATION: Xaa is any naturally occurring amino acid
295 <400> SEQUENCE: 13
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W--> `297 Ser Arg Xaa Xaa Xaa Xaa Xaa Xaa Tyr Ala Met Asp Tyr`

```
298 1               5                   10
301 <210> SEQ ID NO: 14
302 <211> LENGTH: 51
303 <212> TYPE: DNA
304 <213> ORGANISM: Artificial Sequence
306 <220> FEATURE:
307 <223> OTHER INFORMATION: oligonucleotide F151
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310 <220> FEATURE:
311 <221> NAME/KEY: misc_feature
312 <222> LOCATION: (23)..(23)
313 <223> OTHER INFORMATION: v is a, c, or g
315 <220> FEATURE:
316 <221> NAME/KEY: misc_feature
317 <222> LOCATION: (25)..(26)
318 <223> OTHER INFORMATION: r is a or g
320 <220> FEATURE:
321 <221> NAME/KEY: misc_feature
322 <222> LOCATION: (28)..(28)
323 <223> OTHER INFORMATION: w is a or t
325 <220> FEATURE:
326 <221> NAME/KEY: misc_feature
327 <222> LOCATION: (29)..(29)
328 <223> OTHER INFORMATION: m is a or c
330 <220> FEATURE:
331 <221> NAME/KEY: misc_feature
332 <222> LOCATION: (30)..(30)
333 <223> OTHER INFORMATION: y is c or t
335 <220> FEATURE:
336 <221> NAME/KEY: misc_feature
337 <222> LOCATION: (31)..(31)
338 <223> OTHER INFORMATION: k is g or t
340 <220> FEATURE:
341 <221> NAME/KEY: misc_feature
342 <222> LOCATION: (32)..(32)
343 <223> OTHER INFORMATION: m is a or c
345 <400> SEQUENCE: 14
346 gcagcttctg gcttcaccat tavtprtwmy kmtatacact gggtgcgtca g          51
349 <210> SEQ ID NO: 15
350 <211> LENGTH: 51
351 <212> TYPE: DNA
352 <213> ORGANISM: Artificial Sequence
354 <220> FEATURE:
355 <223> OTHER INFORMATION: oligonucleotide F152
358 <220> FEATURE:
359 <221> NAME/KEY: misc_feature
360 <222> LOCATION: (23)..(23)
361 <223> OTHER INFORMATION: v is a, c, or g
363 <220> FEATURE:
364 <221> NAME/KEY: misc_feature
365 <222> LOCATION: (25)..(26)
366 <223> OTHER INFORMATION: r is a or g
368 <220> FEATURE:
369 <221> NAME/KEY: misc_feature
370 <222> LOCATION: (28)..(28)
371 <223> OTHER INFORMATION: w is a or t
373 <220> FEATURE:
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Input Set : **A:\Sequence Listing.txt**
Output Set: **N:\CRF4\12222004\J759731A.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

```
Seq#:10; Xaa Pos. 3,4,5,6,7,8,9
Seq#:11; Xaa Pos. 3,4,5,6,7,8,9
Seq#:12; Xaa Pos. 3,4,5,6,7,8
Seq#:13; Xaa Pos. 3,4,5,6,7,8
Seq#:23; N Pos. 22,25,31,32
Seq#:25; Xaa Pos. 3,4,5,6,7
Seq#:26; Xaa Pos. 2,3,4,5,6,7,8
Seq#:27; Xaa Pos. 2,4,5,6,7,8,9
Seq#:28; Xaa Pos. 2,3,4,5,6,7,8
Seq#:29; Xaa Pos. 2,4,5,6,7,8,9
Seq#:30; Xaa Pos. 2,3,5,6,7,8,9
Seq#:31; Xaa Pos. 2,3,4,6,7,8,9
Seq#:32; Xaa Pos. 2,3,4,5,6,7,8
Seq#:33; Xaa Pos. 2,4,5,6,7,8,9,10
Seq#:34; Xaa Pos. 2,3,5,6,7,8,9,10
Seq#:35; Xaa Pos. 2,3,4,6,7,8,9,10
Seq#:36; Xaa Pos. 2,3,4,5,7,8,9,10
Seq#:37; Xaa Pos. 2,3,4,5,6,7,9,10
Seq#:38; Xaa Pos. 2,3,4,5,6,7,8,10
Seq#:39; Xaa Pos. 2,3,4,5,6,7,8,9
Seq#:40; Xaa Pos. 3,4,5,6,7,8,9
Seq#:41; Xaa Pos. 3,4,5,6,7,8,9,10
Seq#:42; Xaa Pos. 3,4,5,6,7,8,9,10
Seq#:43; Xaa Pos. 3,4,5,6,7,8,9,10,11
Seq#:44; Xaa Pos. 2,4,5,6,7,8,9
Seq#:45; Xaa Pos. 2,4,5,6,7,8,9
Seq#:46; Xaa Pos. 3,4,5,6,7,8,9,10
Seq#:47; Xaa Pos. 3,4,5,6,7,8
Seq#:48; Xaa Pos. 3,4,5,6,7,8,9
Seq#:49; Xaa Pos. 3,4,5,6,7,9
Seq#:50; Xaa Pos. 3,4,5,6,7,8,9
Seq#:51; Xaa Pos. 3,4,5,6,8
Seq#:52; Xaa Pos. 3,4,5,6,7,8
Seq#:53; Xaa Pos. 3,4,5,6,7,8,10
Seq#:54; Xaa Pos. 3,4,5,6,7,8,9,10
Seq#:55; Xaa Pos. 3,4,5,6,7,8,9,10,11
Seq#:56; Xaa Pos. 3,4,5,6,7,8,9,11
Seq#:57; Xaa Pos. 3,4,5,6,7,8,9,10,12
Seq#:58; Xaa Pos. 3,4,5,6,7,8,9,10,11,12
Seq#:59; Xaa Pos. 2,3,4,5,6,7
Seq#:60; Xaa Pos. 2,3,4,5,6,7,8
Seq#:61; Xaa Pos. 2,3,4,5,6,7,8,9
Seq#:62; Xaa Pos. 2,3,4,5,6
Seq#:63; Xaa Pos. 2,3,4,5,6,7,8,9
```

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Input Set : **A:\Sequence Listing.txt**
Output Set: **N:\CRF4\12222004\J759731A.raw**

Seq#:64; Xaa Pos. 2,3,4,5,6,7,8,9,10
Seq#:65; Xaa Pos. 2,3,4,5,6,7,8,9,10,11
Seq#:66; Xaa Pos. 2,3,4,5,6,7,8,9,10,12
Seq#:67; Xaa Pos. 2,3,4,5,6,7,8,9,10,11,12,14
Seq#:82; Xaa Pos. 4
Seq#:88; Xaa Pos. 4,9
Seq#:94; Xaa Pos. 2

Input Set : **A:\Sequence Listing.txt**
Output Set: **N:\CRF4\12222004\J759731A.raw**

```
L:227  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
L:252  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
L:277  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0
L:297  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0
L:906  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0
L:939  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0
L:969  M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
L:1004 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:1029 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:0
L:1054 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:0
L:1084 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:0
L:1114 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:0
L:1139 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:0
L:1169 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:0
L:1204 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0
L:1234 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:0
L:1269 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
L:1304 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0
L:1334 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:0
L:1364 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:0
L:1384 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:0
L:1409 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:0
L:1429 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:0
L:1454 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:0
L:1484 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44 after pos.:0
L:1509 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:0
L:1529 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46 after pos.:0
L:1549 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47 after pos.:0
L:1574 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48 after pos.:0
L:1599 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49 after pos.:0
L:1629 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50 after pos.:0
L:1654 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:0
L:1684 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:0
L:1709 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53 after pos.:0
L:1739 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54 after pos.:0
L:1769 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55 after pos.:0
L:1794 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:56 after pos.:0
L:1819 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:57 after pos.:0
L:1849 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:0
L:1874 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0
L:1899 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60 after pos.:0
L:1924 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0
L:1949 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:62 after pos.:0
L:1974 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:63 after pos.:0
L:1999 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:64 after pos.:0
L:2024 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65 after pos.:0
L:2054 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:66 after pos.:0
L:2084 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:67 after pos.:0
```

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L:2304 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:82 after pos.:0
L:2399 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:88 after pos.:0